**Overview**

The Tektronix DS1000 Series Television Demodulators are the answer for cable operators, broadcasters and manufacturers that need a low-cost, high-performance demodulator. They support television standards M/N and B/G.

The DS1000 Series products are full measurement-grade demodulators, with specifications better than demodulators twice their size. Input sensitivity and other specifications make the DS1000 Series ideal for use as a repeater or as the analog front end of an RF-to-digital conversion system in all-digital cable systems. It can also act as a precision set-top converter for making baseband measurements in the field.

The DS1000 Series products are well suited for remote node monitoring. The addressable serial port allows remote control and status monitoring using computers and modems.

For a complete solution that includes a graphical display, the DS1000 Series can be combined with the 1740A Combination Waveform/Vector Monitor.

**Ghost Canceling:** The DS1001G incorporates state-of-the-art ghost cancelling technology which improves overall video quality by using a specialized ghost cancelling test signal, pre-inserted into the television signal by broadcasters, to automatically null out annoying static or dynamic picture “ghosts” caused by RF signal reflections from large buildings, trucks or changing weather conditions.

**Audio Support:** Audio support includes BTSC stereo for system M/N (DS1001A) as well as both FM (mono & dual tone) and NICAM support for System B/G (DS1002). The DS1001A audio outputs are through special terminal-block connectors, which provide simultaneous outputs of Left, Right and SAP audio channels. The DS1002 audio output is through 2xLR connectors. These connectors can be configured in a variety of ways (depending on system), including: mono, SAP, stereo right and left, both right or both left. The DS1001A also has a 4.5 MHz intercarrier output for driving an external aural modulation monitor.

**Remote Programming:** The DS1000 Series supports remote programming via either RS-232 or RS-485 at 9600 baud. Most front-panel controls can be accessed via the port.

---

### Features

- Standards supported: NTSC or PAL M/N
- Tuning Range: 55.25 to 801.25 MHz
- Stereo Sound: BTSC, Dual Tone, NICAM (system dependent)
- Zero carrier pulse for depth of modulation measurements
- Standard and user-defined channel tables
- RF Ghost Cancelling processing (DS1001G Only)
- RS-232/RS-485 I/O port for remote control
- Simultaneous left and right and SAP audio output monitoring
- Remote monitoring of RF input level
- Lower power dissipation for increased efficiency and reliability
- Dual video outputs
- IF inputs and outputs
- Front panel lock-out feature
- Compact half 1RU size

### Applications

- Monitoring transmissions and live programs
- Operational Demodulation
- Broadcast Demodulation
### Panel Controls

- **Display Mode**
- **Program Selection**
- **Quad Out**
- **Video Out**
- **Right IF Audio Out**
- **Left Audio Out**
- **Audio Out**
- **Front**
- **Power**
- **RF In**
- **IF In**
- **IF Out**
- **2nd Audio Out**
- **Serial Connector**
- **Rear**

### Specifications

#### Video

- **RF Tuning Range:** 55.25 to 801.25 MHz (Under range to 53.75)
- **RF Sensitivity:** 0 to +30 dBmV, +60 to +90 dBµV
- **Return Loss:** >6 dB
- **Input Impedance:** 75 Ω
- **Channel Tables:** User configurable
- **Visual IF Frequency:** 45.75 MHz
- **Aural IF Frequency:** 41.25 MHz
- **IF Output:** 51 dBmV/+111 dBµV (typical), BNC
- **Video Outputs:** Two BNC connectors
  - 4.5 MHz Intercarrier Input and Output: Two BNC connectors
  - Video Signal Output: 1 Vp-p baseband video (GCR 1 channel only)
  - Video Signal-to-noise: >50 dB (NTC7-weighted)
  - Frequency Response (18°C to 26°C): ±0.7 dB, 100 kHz to 3.58 MHz (typical)
  - Group Delay Sound Trap Off: ±50 ns, 100 kHz to 3.58 MHz
  - Group Delay Reference Sound Trap On: FCC
  - Differential Gain: <1.5% (<2.5% DS1001G typical)
  - Differential Phase: <1.5° typical (<2° DS1001G typical)
  - Chroma/Luma Delay: <40 ns
  - Luminance Bar Amplitude: <2%
  - Luminance Bar Tilt: <2% (typical 1%)
  - 2T K-factor: <2.5% (typical 1%)
  - Line Time Distortion: <3% typical

#### Audio

- **Audio Outputs:** Terminal-block connectors (simultaneous outputs of Left, Right, SAP)
- **Level:** 0 dBm across 600 Ω
- **Frequency Response:** ±0.5 dB, 50 Hz to 12 kHz (typical)
- **Total Harmonic Distortion:** <1% at 1 kHz

#### Power Requirements

- **Voltage Range:** 95 to 240 VAC
- **Line Frequency:** 50/60 Hz
- **Power Consumption:** 35 W maximum

#### Physical

- **Dimensions:** HxWxL: 1.8 x 8.1 x 17.3 inches (46 x 206 x 440 mm)
- **Operating Temp.:** +5°C to +35°C
- **Storage Temp.:** -20°C to +70°C
- **Altitude – Operating:** 0 to 6,500 ft. (2,000 m)
- **Altitude – Non-Operating:** 0 to 50,000 ft. (4,572 m)
- **Weight:** 35 W maximum
- **Conformities:** FCC, CE, RoHS

### Ordering Info

**DS1000 Demodulator** – Used but tested
Warranty from DVEO for six months

---

Specs © Tektronix, Inc.